

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Asad A. Khan et al.

Serial No.:

10/667,806

Filing Date:

September 22, 2003

Title:

STACKED COLOR LIQUID CRYSTAL DISPLAY DEVICE

Docket No.: KENT.35570US3

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

In accordance with Rule 56, applicants are aware of the publications listed in the enclosed copy of Patent Office Form 1449. Since the Office has waived the requirement under 37 C.F.R §1.98(a)(2)(i) for submitting copies of cited U.S. patents and U.S. patent application publications, a copy of each listed U.S. patent is not being submitted herewith.

The information disclosure statement submitted herewith is being filed within three months of the filing date of the application or before the mailing date of a first Office Action on the merits, 37 CFR 1.97(b). This submission should not be construed as an admission that these publications constitute prior art under 35 USC 102; 103.

Should there be any fee required, the Commissioner is authorized to charge Deposit Account No. 16,0820 (Our Docket No. KENT.35570US3).

Respectfully submitted,

PEARNE & GORDON LLP

1801 East 9th Street, Suite 1200 Cleveland, Ohio 44114-3108 (216) 579-1700

عر Date: January ____ , 2004

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service as first class mail addressed to the Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the dated indicated below.

U.S. DEPT. OF COMMERCE USPTO Form 1449 Attorney Docket No.: KENT-35570US3 Serial No.: 10/330,104 PATENT AND TRADEMARK OFFICE (modified) Applicant: Asad A. Khan et al. INFORMATION DISCLOSURE CITATION Filing Date: September 22, 2003 Sheet 3 of 5 **U.S. PATENT DOCUMENTS** Examiner Document Date Clas Subcl Filing Date . Name Initials Number (if appropriate) ass S 5,422,033 06-06-95 Mochizuki et al. 5,437,811 08-01-95 Doane et al. 5,453,863 09-26-95 West et al. 5,493,430 02-20-96 Lu et al. 5,495,355 02-27-96 Konuma 5,506,704 04-09-96 Broer et al. 5,570,216 10-29-96 Lu et al. 5,661,533 08-26-97 Wu et al. 5,695,682 12-09-97 Doane et al. 5,748,277 05-05-98 Huang et al. 5,801,796 09-01-98 Lowe 5,875,012 02-23-99 Crawford et al. 6,034,752 03-07-00 Khan et al. 6,377,321 04-23-02 Khan et al. FOREIGN PATENT DOCUMENTS Examiner Document Number Date Country Class Subclass Initials 0218132 10/1990 EP 0211646 04/1992 EP 0351746 12/1993 EP 760030475 03/1976 JP Abstract OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) J.W. Doane et al., "Front-Lit Flat Panel Display from Polymer Stabilized Cholesteric Textures", Japan Display '92, pp. 73-76 (1992). D.K. Yang et al., "Cholesteric Liquid-Crystal/Polymer-Gel Dispersions: Reflective Display Applications", SID Digest, pp. 759-761 (1992). Blinov, L.M., "Electrical and Magnetic Optical Properties of Liquid Crystal:, pp 212-225, 1983 **EXAMINER** DATE CONSIDERED *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609 Draw Line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant

**Copies of references not provided at the time of this submission.

USPTO Form 1449	U.S. DEPT. OF COMMERCE PATENT AND TRADEMARK OFFICE		Attorney Docket No.: KENT-35570US3	Serial No.: 10/330,104					
(modified)			Applicant: Asad A. Khan et al.						
INFORMATION DISCLOSURE CITATION Sheet 4 of 5			Filing Date: September 22, 2003		Group:				
		U.S. F	PATENT DOCUMENTS		<u> </u>	•			
Examiner Initials	Document Number	Date	Name	Class	Subclass	Filing (if appro			
						ı			
							,		
		<u> </u>	·						
				 					
	·								
			<u> </u>	<u></u>	ļ				
			N PATENT DOCUMENTS	Υ	<u> </u>				
Examiner Initials	Document Number	Date	Country	Class	Subclass	Translation Yes No			
	52-113386	09/1997	JP						
	0123981A3	07/1984	EP						
-	0123981A2	07/1984	EP						
	0217240	12/1989	EP						
		OTHER DOCUMENTS	(Including Author, Title, Date, Pertinent Pages, etc.)						
	Sunohara et al., "A I	Sunohara et al., "A Reflective Color LCD Using Three-Layer GH-Mode", SID 96 Digest, pp. 1-7.							
	"Liquid Crystals-Ap	"Liquid Crystals-Applications and Uses" Birenda Bahadur vol. 2, pp. 130-156, World Scientific Publishing Co., Singapore							
•	1991	1991							
	"Additive Colour Pro	"Additive Colour Properties and Colour Gamut of Cholesteric Liquid Crystals", David M. Makow and C. Leroy Sanders,							
	Nature, Vol. 276, No	Nature, Vol. 276, Nov. 2, 1978, pp. 48-50, MacMilliam Journals 1978.							
EXAMINER	÷		DATE CONSIDERED						
Draw L Include	I if reference considered, whether or not citatine through citation if not in conformance an copy of this form with next communication (s not provided at the time of this submission	d not considered. to Applicant	609						

(nodified) U.S. DEPT. OF COMMERCE Attorney Docket No.: KENT.35570US3 PATENT AND TRADEMARK OFFICE Applicant: Asad A. Khan et al. INFORMATION DISCLOSURE CITATION Filing Date: September 22, 2003 Sheet 1 of 5 U.S. PATENT DOCUMENTS Examiner Date Class Initials Number 3,642,348 02-15-72 Wysocki et al. 3,650,603 03-21-72 Heilmeier et al. 3,652,148 03-28-72 Wysocki et al. 3,697,150 10-10-72 Wysocki et al. 3,704,056 11-28-72 Wysocki et al. 3,806,230 04-23-74 Haas 3,821,720 06-28-74 Greubel et al. 3,891,307 06-24-75 Tsukamoto et al. 4,097,127 06-27-78 Haas et al. 4,234,437 11-18-80 Friberg et al. 4,239,347 12-16-80 Brantz et al. 4,246,302 01-20-81 Benton et al. 4,357,374 11-02-82 Ogawa 4,402,999 9-1983 Tatsumichi et al. 4,448,823 05-15-84 Clifford FOREIGN PATENT DOCUMENTS Examiner Document Number Date Country Class Initials WO 94/10260 11.05.94 **PCT**

Serial No.: 10/667,806

Filing Date

(if appropriate)

Стопр:

Subclass

Subclass

Translation

		Landin and the second of the s						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)								
	1	Crawford et al., "Reflective Color LCDs Based On H-PDLC and PSCT Technologies", SID 96 Digest, (May 1996).						
	F. Moia, "New Liquid Crystal Mixtures For Supertwisted LCDs With Low Tendency For Fingerprint Textures", Central Research Units, Dept ZFE/RLC.4002 Basil, Switzerland, pp 1-12, (March 1989)							
	3	Kawata, Yasushi et al., "A High Reflective LCD With Double Cholesteric Liquid Crystal Layers", pages 246-249, Toshiba Corporation (1997).						
	4	Gerber, P.R., "Compensation Of Temperature Dependence Of Transmission Characteristics Of Twisted Nematic Displays By Cholesteric Dopands", Plysics Letter, Volume 78A, no. 3, pages 285-299 (1980)						
	5	Hochgesand, R. et al., "Helical Twisting Power Of Chiral Dopants In Nematic Liquid Crystal", pages 1-21, Industrial Chemicals Division - Dept. Of Physical and Inorganic Research, date unknown						
	6							

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609

Draw Line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant

**Copies of references not provided at the time of this submission

EXAMINER

USPTO Form 1449 (modified)

U.S. DEPT. OF COMMERCE PATENT AND TRADEMARK OFFICE

Applicant: Asad A. Khan et al.

Attorney Docket No.: KENT-35570US3

Serial No.: 10/667,806

INFORMATION DISCLOSURE CITATION

Sheet 2 of 5 Filing Date: September 22, 2003

Group:

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Name	Clas s	Subcl ass	Filing Date (if appropriate
	4,505,548	03-19-85	Berreman et al.			
	4,557,995	12-10-85	Broers et al.			
	4,779,942	10-25-88	Verney			
	4,780,240	10-25-88	Emoto et al.			
	4,813,770	03-21-89	Clerc et al.			
	4,826,620	05-02-89	Heppke et al.			-
	4,832,461	05-23-89	Yamagishi et al.			
	4,867,536	09-19-89	Pidsosny et al.			
	4,966,726	10-30-90	Scherowsky et al.			
	4,973,138	11-27-90	Yamazaki et al.			
	5,016,985	05-21-95	Kalmanash et al			
	5,113,272	05-12-92	Reamey			
	5,124,818	06-23-92	Conner et al.			
	5,170,204	12-08-92	Mukai et al.			
	5,200,845	04-06-93	Crooker et al.			
	5,251,048	10-05-93	Doane et al.			-
	5,268,782	12-07-93	Wenz et al.			
	5,309,265	05-04-94	Buchecker et al.			,
	5,325,218	06-28-94	Willett et al.			
	5,329,388	07-12-94	Yoshimizu			
	5,371,618	12-06-94	Tai et al.			
	5,384,067	01-24-95	Doane et al.			
	5,399,390	03-21-95	Akins			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

- D.K. Yang, et al. "Cholesteric reflective display: Drive scheme and contrast", 320 Applied Physics Letters 64, (15), pages 1905 and 1907 (1994)
 - B.G. Wu et al., "Zero Field, Multistable Cholesteric Liquid Crystal Displays", The University of Texas at Arlington, pages 476-479, date unknown.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609

Draw Line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant

**Copies of references not provided at the time of this submission.

INFORMATION DISCLOSURE CITATION Sheet 5 of 5	Applicant: Asad A. Khan et al. Filing Date: September 22, 2003				
Sheet 5 of 5	Filing Date: September 22, 2003				
U.S. PA			Group:		
	TENT DOCUMENTS				
Examiner Document Date Initials Number	Name	Class	Subclass	Filing I (if appro	Date priate)
v					
		1			
		1			
FOREIGN	PATENT DOCUMENTS				
Examiner Document Number Date	Country	Class	Subclass	Transla Yes	ation No
				100	1,0
		+			
		1			
OTHER DOCUMENTS (Include	ding Author, Title, Date, Pertinent	t Pages etc.)	<u></u>		
" Reflective Cholesteric Liauid-Crystal Displa			,		
Information Display, 12/96, pp. 18-21.	175, 5. William Donne and Minne	.1 C. Diciano	2		
		<u> </u>			
EXAMINER	DATE CONSIDERED				
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609					

**Copies of references not provided at the time of this submission.